TCT-498

Relationship between high platelet on-clopidogrel treatment reactivity and sleep apnea syndrome in acute coronary syndromes

Zenko Nagashima[1], Kengo Tsukahara[2], Kazuo Kimura[3], Satoshi Umemura[4]
[1]Yokosuka City hospital, Yokosuka, Japan, [2]Yokohama City University Medical Center, Yokohama, Kanagawa, [3]Yokohama City University Medical Center, Yokohama, Japan, [4]Yokohama City University Graduate School of Medicine, Yokohama, Japan

Background: Sleep apnea syndrome (SAS) is often observed in patients with acute coronary syndromes (ACS). It is known that SAS is associated with an increased risk of cardiovascular events .However, it remains unknown that relationship between high on-clopidogrel treatment platelet reactivity (HPR) and SAS in patients with ACS undergoing stent implantation.
Methods: Stent implantation was performed in 62 patients with ACS receiving aspirin 100mg/day and clopidogrel 75mg/day. P2Y12 Reaction Unit (PRU) was determined on admission, 6 days(acute phase) and 18 days(chronic phase) after stenting with VerifyNow P2Y12 assay. HPR was defined as PRU ≧235. Sleep disturbance was evaluated with Apnomonitor. SAS was defined as apnea-hypopnea index (AHI) ≧15 . Patients were divided into 2groups, SAS group (n=26) and non-SAS group (n=36).
Results: There were no significant differences in baseline characteristics between 2 groups. PRU levels were similar at baseline (271±60 vs 275±71, p=0.40). In acute phase, SAS group had a trend of higher PRU level (270±44 vs 243±56, p=0.06). And in chronic phase, SAS group had higher PRU level (249±44 vs 183±52, p=0.002) and the higher frequency of HPR (70% vs 21%,p=0.01).
Conclusions: SAS may be related with HPR in both acute and chronic phase of ACS. These results suggest that assessment of sleep disturbance might be required in patients with ACS receiving clopidogrel.

TCT-499

Comparable outcomes on single use of clopidogrel vs. dual antiplatelet therapy after coronary stenting in patients with acute myocardial infarction

Jun-Hyok Oh[1], Kwang Soo Cha[1], Dae-sung Lee[1], Han Cheol Lee[1], Hye Won Lee[1], Taek Jong Hong[1], Donghun Shin[1], Jung Hyun Choi[1]
[1]Pusan National University Hospital, Busan, Korea, Republic of

Background: Dual antiplatelet therapy (DAP) with aspirin and a thienopyridine following coronary stenting is superior to aspirin alone in reducing cardiovascular events in both the acute coronary syndrome (ACS) and the elective setting. However, there is no consensus that DAP is more effective and safe to clopidogrel alone in secondary prevention. We investigate whether clopidogrel alone vs. DAP leads to an excess of adverse outcomes in acute myocardial infarction (AMI) patients after coronary stenting.
Methods: We studied a consecutive series of 13,348 AMI patients undergoing successful coronary stenting and evaluated data from patients were discharged on clopidogrel alone (n=85, 0.6%) and DAP (n=13,263, 99.4%) from korea acute myocardial infarction registry. To eliminate biased estimates, a propensity score was used and two cohorts of 1:5 nearest neighbor matched patients were obtained.
Results: Propensity matching identified two cohorts of 85 patients on clopidogrel alone and 425 patients on DAP. At a median follow-up period of 11.8 months, there was no difference in all-cause death (3.1 vs. 3.5%, p=0.82), cardiovascular death (2.1 vs. 2.4%, p=0.892) myocardial infarction (MI) (1.6 vs. 1.2%, p=0.75), revascularization (6.6 vs. 8.2%, p=0.583) and cumulative major adverse cardiovascular events (MACE) (11.3 vs. 12.9%, p=0.665). Patients with clopidogrel alone compared with DAP were not associated with increased all-cause death (HR 1.11, 95% CI 0.314-3.93, p=0.871), MI (HR 0.38, 95% CI 0.17-11.2, p=0.763), revascularization (HR 0.808, 95% CI 0.353-1.851, p=0.615) and MACE (HR 1.129, 95% CI 0.585-2.178, p=0.717) during follow up.
Conclusions: In this observation study, clopidogrel alone therapy after coronary stenting did not increase the mortality and MACE compared with DAP therapy. However, larger trials are needed to support these observations.

TCT-500

Prasugrel Is A More Potent Platelet Inhibitor Than Clopidogrel In Bivalirudin-Treated Patients. Comparative Effects of Two Thienopyridines On ADP And Thrombin Receptor Antagonism As Assessed By Aggregometry

Carey D. Kimmelstiel[1], Athan Kuliopulos[2], Vilma Castaneda[2], Ryan Stevenson[2], Andrew Weintraub[2], Navin K. Kapur[3]
[1]Tufts Medical Center, Boston, United States, [2]Tufts Medical Center, Boston, MA, [3]Tufts University, Boston, Massachusetts

Background: Early stent thrombosis has been noted with increased frequency in acute coronary syndrome patients undergoing coronary intervention when treated with bivalirudin and clopidogrel. We hypothesized that treatment with the more potent thienopyridine prasugrel would lead to significantly greater inhibition of platelet aggregation (PA) than clopidogrel following termination of bivalirudin treatment.
Methods: 24 patients referred for intervention with planned bivalirudin therapy, not previously treated with a P2Y12 inhibitor and not receiving heparins or GP IIb/IIIa inhibitors were randomized to treatment with either clopidogrel (600 mg) or prasugrel (60 mg). PA was measured by light transmission aggregometry (LTA) of platelet-rich plasma in response to P2Y12 and PAR1 and PAR4 thrombin receptor agonists at baseline and at 1, 2, 4 and 16 h following the cessation of bivalirudin infusion. Platelet response to agonists: 20 μM ADP, 5 μM SFLLRN, and 160 μM AYPGKF (P2Y12, PAR1 and PAR4 receptors respectively) was performed. The magnitude of inhibition of PA for each agonist was calculated as the mean final change from baseline in LTA at each time point.
Results: As compared to clopidogrel, prasugrel led to significantly earlier and more potent inhibition of PA following the discontinuation of bivalirudin. Prasugrel-mediated inhibition of PA was significantly greater than that of clopidogrel at all time points for ADP as well as PAR1 and PAR4 peptide agonists (Table).

Agonist	Time (hour)	Clopidogrel-Inhibition of Platelet Aggregation (%+SE)	Prasugrel-Inhibition of Platelet Aggregation (%+SE)	p
ADP 20 μM	1	38 + 10	84 + 9	0.002
	2	53 + 10	94 + 5	0.001
	4	72 + 8	98 + 1	0.002
	16	85 + 3	98 + 1	0.003
SFFLRN 5 μM	1	2 + 8	62 + 9	<0.001
	2	9 + 8	64 + 10	<0.001
	4	17 + 8	75 + 6	<0.001
	16	15 + 8	58 + 7	0.001
AYPGKF 160 μM	1	7 + 3	39 + 9	0.002
	2	9 + 3	44 + 11	0.004
	4	13 + 4	53 + 8	<0.001
	16	11 + 4	41 + 10	0.01

Conclusions: Following the cessation of bivalirudin treatment, prasugrel compared to clopidogrel therapy, causes greater and earlier inhibition of PA in response to both P2Y12 and thrombin receptor agonists. This is the first report of significant inhibition of both thrombin receptors with prasugrel as compared to clopidogrel. This may explain the prasugrel-mediated reduction in stent thrombosis noted in clinical trials.

TCT-501

Dual Antiplatelet Therapy Interruption For Surgery: Insights From The PARIS (Patterns Of Non-adherence To Anti-Platelet Regiments In Stented Patients) Registry

Mikkel Schoos[1], Aarti Bhasin[2], Samantha Sartori[3], Melissa Aquino[4], Jennifer Yu[5], Timothy D. Henry[6], David Cohen[7], David J. Moliterno[8], Cono Ariti[9], Roxana Mehran[10]
[1]Mount Sinai Medical Center, New York, NY, USA, Copenhagen, Denmark, [2]Mount Sinai Medical Center, New York, NY, USA, New York, NY, [3]Mount Sinai School of Medicine, New York, NY, [4]The Icahn of Medicine at Mount Sinai, New York, NY, [5]Mount Sinai Medical Center, New York, NY, [6]Cedars-Sinai Medical Center, Minneapolis, United States, [7]Saint Luke's Mid America Heart Institute, Kansas City, United States, [8]University of Kentucky, Lexington, United States, [9]London school of hygiene and tropical medicine, london, United Kingdom, [10]Mount Sinai Hospital, New York, United States

Background: Surgery is a frequent cause of dual antiplatelet therapy (DAPT) cessation in patients following percutaneous coronary intervention (PCI). However, the specific types of surgery leading to interrupting DAPT have not been described.
Methods: PARIS is a multinational registry of 5018 patients prescribed DAPT following successful PCI. Pre-specified categories of DAPT cessation were physician recommended discontinuation, brief interruption (< 14 days) for a surgical procedure or disruption (due to bleeding or noncompliance). We examined the patterns and types of procedures leading to DAPT interruption.
Results: Over 2 years there were 594 DAPT interruptions involving 491 (9.8%) patients, with 42% occurring within 1 year. Among known recommenders (57.1%), non-cardiologists (primary care physicians, surgeons, dentists) (51.3%) frequently recommended interruption. Among cases where the specific type of surgery was reported (69.7%), minor procedures comprised the majority (68.4%), compared to major surgery (31.6%) (figure). Interruption of only one antiplatelet was more common (57.2%) [clopidogrel (32.3%), aspirin (24.9%)], with similar patterns seen for minor and major surgery. Crude rates of cardiac death, MI or ST from interruption to follow-up were higher after major surgery (7.6% vs 2% P< 0.001) but did not differ significantly when correcting for disruption (4.2% vs 2% P=0.08).